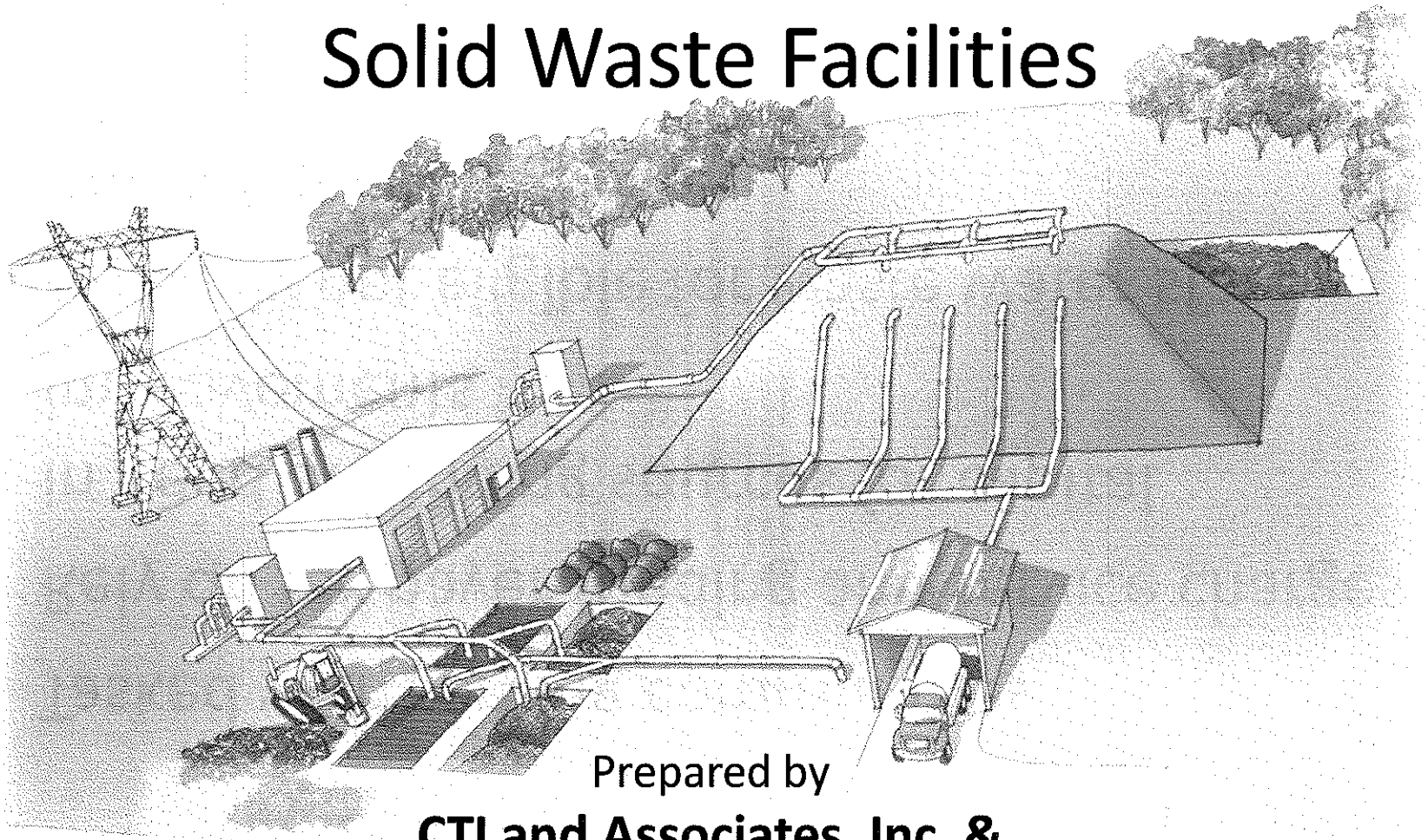
Impact of Key Rule Changes on Solid Waste Facilities



Prepared by

CTI and Associates, Inc. &

St. Clair County Michigan

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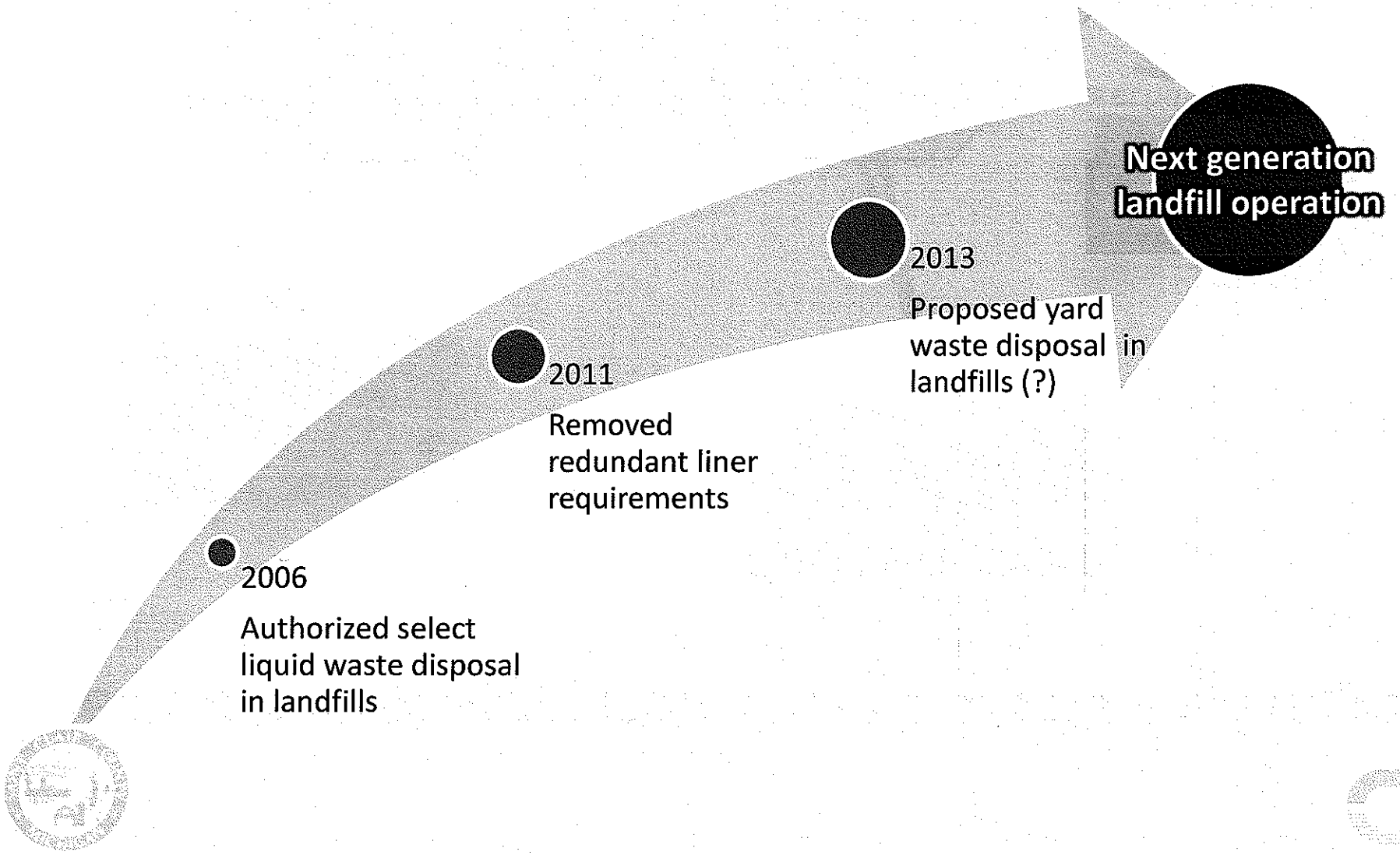
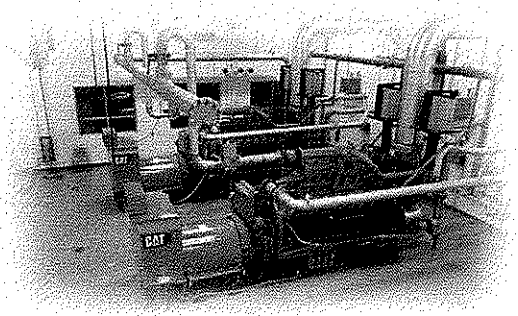
Municipally-Owned Solid Waste Facilities

- Tasked with serving communities
- Rely on tax payer funding and service charges
- In need of funding sources for capital improvements
- Typically not eligible for waste water state funding (SRF)

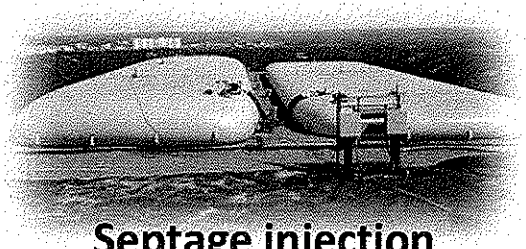
Key Regulatory Changes



Technological Advancements – Past Rule Changes

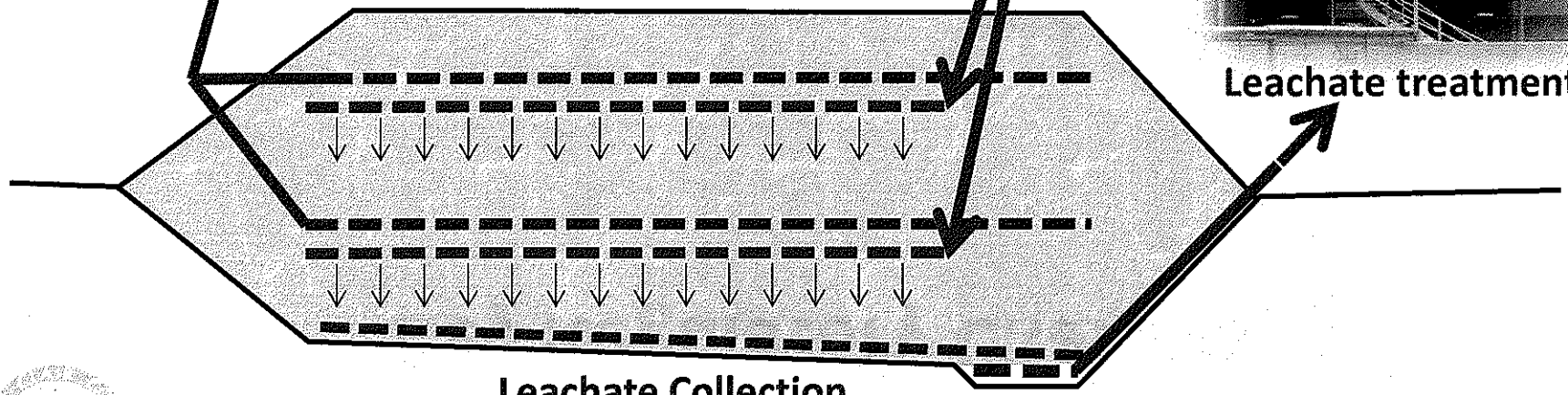


Landfill gas



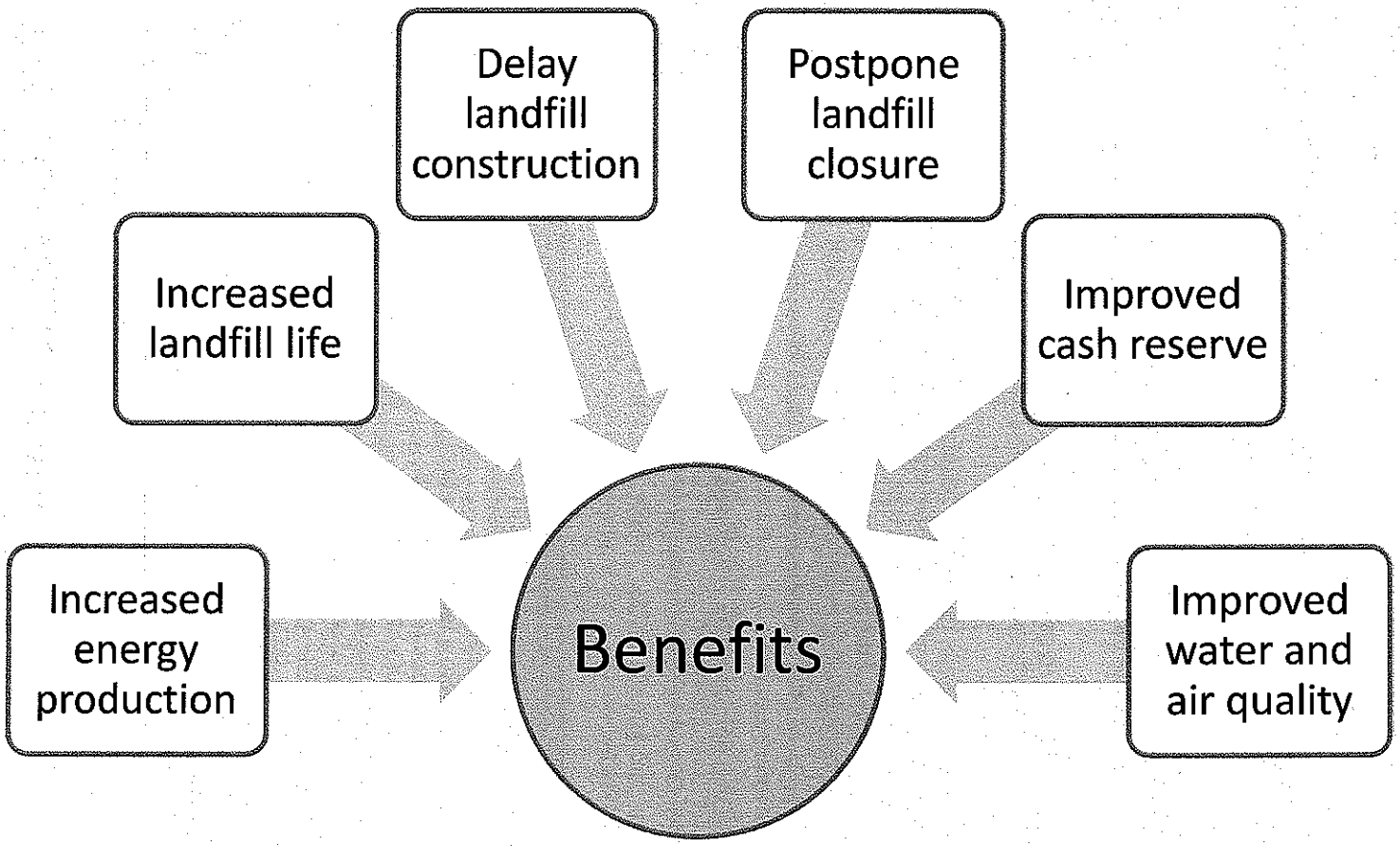
Septage injection

Leachate treatment



Leachate Collection

Benefits of Past Rule Changes



A Strategic Approach to Financing Your Municipal Landfill Construction

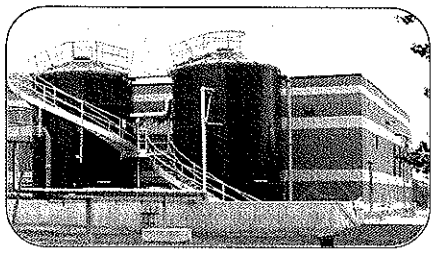
Landfill Operations: Save Money & Generate Revenue

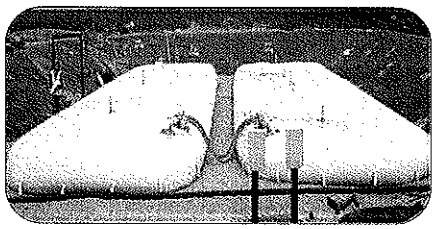
Michigan solid waste disposal regulations were changed in 2006 and 2011 to help promote research and development projects at landfill sites. Subsequent to these changes, St. Clair County (SCC) and CTI developed a new business model to help secure State grants and low-interest loans to pay for landfill activities. With this model facilities can save money on cell construction by utilizing state subsidies, increase revenue with a new waste stream, and create a new revenue stream by increasing landfill gas production and selling renewable energy. Implementing a few basic changes can help you fundamentally transform your landfill operations.

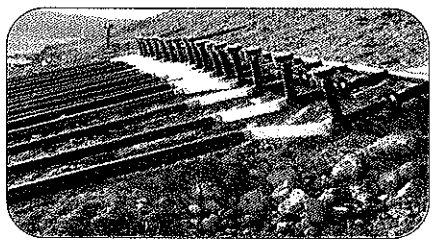
A Case Study: Smiths Creek Landfill

Since 2008, SCC has been injecting septage into their waste, allowing them to secure State funds and optimize management of their Smiths Creek Landfill (SCL). To date the benefits of this winning combination include:

- ⇒ +$250k in grant funding to assist with planning, feasibility studies, and permitting efforts; an additional +$350k in grant funding is currently being sought.
- ⇒ +$19M in low-interest loans to pay for construction of a landfill-gas-to-energy facility, leachate pretreatment facility, new cell construction, and a septage injection project. Of this +$19M, $8.5M of the loan was FORGIVEN as a result of the environmentally-innovative nature of the project. The remaining low-interest loan has a 20-year payback.
- ⇒ An increased rate of LFG production, allowing SCC to generate +$750k in revenue annually.
- ⇒ +$50k additional annual revenue from septage receipt.
- ⇒ An increased rate of settlement helping to delay cell construction.
- ⇒ Cost savings through efficiencies, grants, and loan principal forgiveness has allowed SCL to support other County programs.







Does My Landfill Qualify?

Michigan has several grants and loans that municipal landfills can access with a few changes to operations. Most notably, the State Revolving Fund (SRF) division of the MDEQ is currently offering individual communities up to $2 million in grants, in addition to loans to fund a variety of wastewater management and water quality improvement projects. To secure these grants, communities need only match 10% of the first $1M and 25% of the second $1M. One way to qualify for this funding is to change landfill operations and inject septage into waste. This turns your landfill into an integral part of your community's ***wastewater management plan – qualifying your landfill for State funds.***

The Bottom Line

By making your landfill part of your community's ***wastewater management and water quality improvement programs***, your facility may be eligible for grants / loans not typically afforded to other landfills. Implementation of septage injection at your municipally-owned landfill will not only qualify you for State funds and provide a means to improve your landfill operation, but it can fundamentally change how you manage your facility and other County programs. SCC has paved the way in this regard by resolving regulatory and political issues and setting precedent for other municipal facilities. Their landfill not only meets the waste management needs of their community, it also services wastewater needs, and generates revenue in excess of on-site operational costs. This allows SCC to fund other County programs with monies that otherwise would have been allocated for landfill operations.

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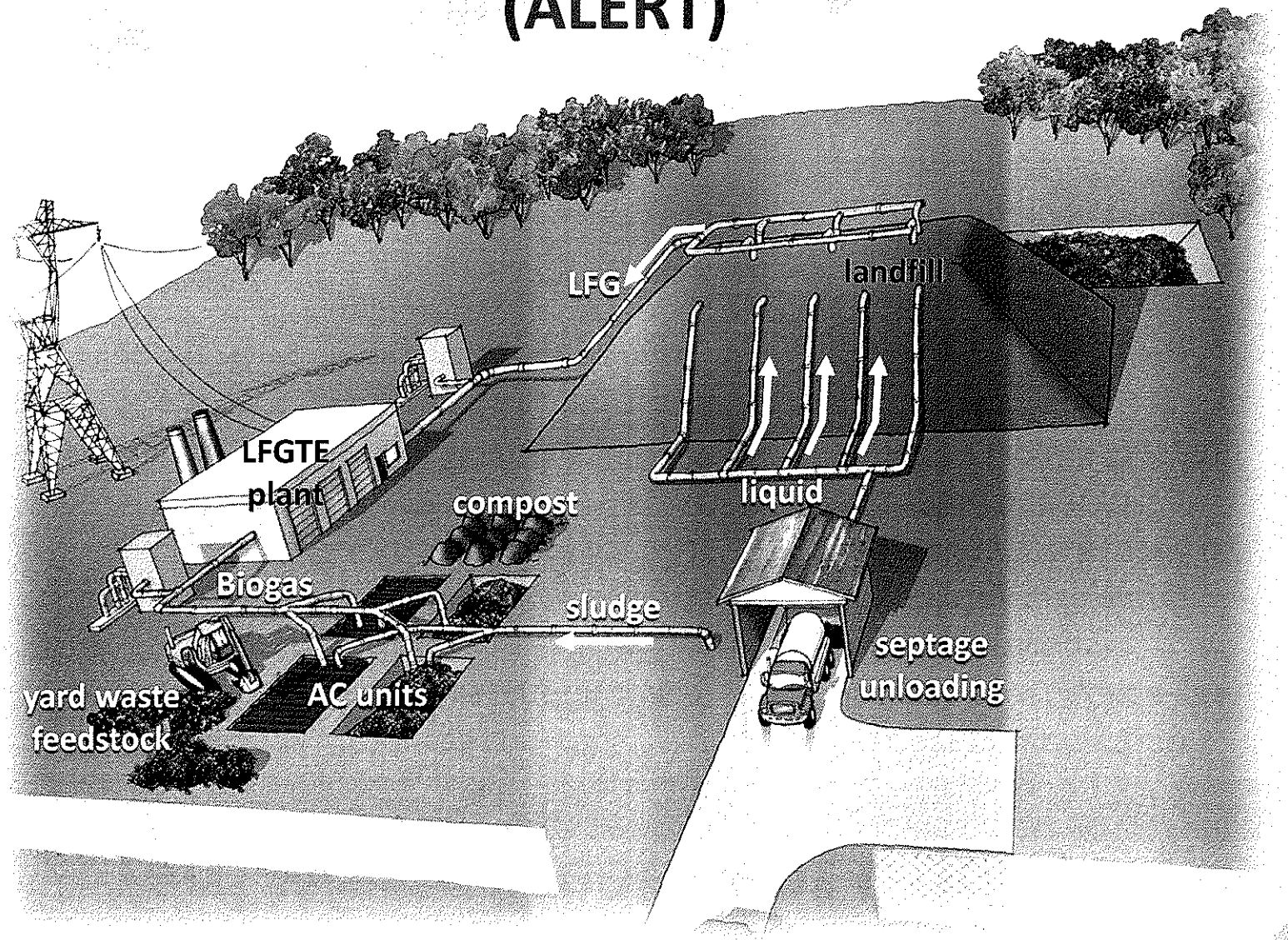
Yard Waste Treatment Options

Option	Pros	Cons
Composting (aerobic)	• Produces compost • Preserves landfill space	• No energy production • Possible greenhouse gas (GHG) emissions • Possible surface water contamination caused by leachable pollutants
Landfilling (at landfills with LFGTE facility)	• Produces renewable energy • Prevents GHG emissions • Prevents surface water pollution	• Shortens landfill lifespan
Accelerated Landfill Energy Recovery Technology (ALERT)	• Produces compost • Preserves landfill space • Produces renewable energy • Prevents GHG emissions • Prevents surface water pollution	• New technology that requires pilot/demo project to standardize operation procedures (SRF grant eligible)

Accelerated Landfill Energy Recovery Technology (ALERT)



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